

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application:

1. (Currently Amended) A method of manufacture of a styrene-butadiene latex comprising the steps of:

manufacture of a core latex of styrene-butadiene polymers;

multiple coating of shell polymers onto the outer side of said core latex; and

adjustment of the gel content and molecular weight of the outermost layer of the latex by adding a chain transfer agent singly after ~~said step of~~ manufacture of said shell polymers.

2. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 1, wherein said latex is manufactured through emulsion polymerization of a core composition comprised of styrene, 1,3-butadiene, an ethylenic unsaturated acid monomer, a cyanovinyl monomer, a monomer that may be copolymerized with said monomers, and a chain transfer agent.

3. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 2, wherein said core composition is comprised of 35 to 90 parts by weight of styrene, 10 to 55 parts by weight of 1,3-butadiene, 1 to 18 parts by weight of an ethylenic unsaturated acid monomer, 0.5 to 15 parts by weight of a cyanovinyl monomer, 1 to 25 parts by weight of a monomer that may be copolymerized with said monomers, and 0.1 to 1.0 parts by weight of a chain transfer agent.

4. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 1, wherein said shell polymers are manufactured through emulsion polymerization of a shell composition comprised of styrene, 1,3-butadiene, an ethylenic unsaturated acid monomer, a cyanovinyl monomer, a monomer that may be copolymerized with said monomers, and a chain transfer agent.

5. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 4, wherein said shell composition is comprised of 30 to 80 parts by weight of styrene, 10 to 70 parts by weight of 1,3-butadiene, 0.5 to 18 parts by weight of an ethylenic unsaturated acid monomer, 1.0 to 20 parts by weight of a cyanovinyl monomer, 1.0 to 20 parts by weight of a monomer that may be copolymerized with said monomers, and 0.1 to 5.0 parts by weight of a chain transfer agent.

6. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 1, wherein said chain transfer agent is mercaptan having 7 to 16 carbon atoms.

7. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 1, wherein the amount of use of said chain transfer agent is 0.05 to 5.0 parts by weight.

8. (Currently Amended) The method of manufacture of a styrene-butadiene latex according to Claim 2-~~or~~4, wherein said ethylenic unsaturated acid monomer is:

one or more kinds of unsaturated carboxylic acids selected from a group of methacrylic acid, acrylic acid, itaconic acid, crotonic acid, fumaric acid, and maleic acid; or

one or more kinds of unsaturated polycarboxylic acid alkyl esters having one or more carboxyl radicals selected from a group of itaconic acid monoethyl ester, fumaric acid monobutyl ester, and maleic acid monobutyl ester.

9. (Currently Amended) The method of manufacture of a styrene-butadiene latex of Claim 2-~~or~~4, wherein said cyanovinyl monomer is acrylonitrile or methacrylonitrile.

10. (Currently Amended) The method of manufacture of a styrene-butadiene latex according to Claim 2-~~or~~4, wherein said monomer that may be copolymerized is one or more kinds of compounds selected from a group of:

unsaturated carboxylic acid alkyl esters which may be methyl acrylate, methyl methacrylate, ethyl acrylate, ethyl methacrylate, butyl acrylate, or butyl methacrylate;

unsaturated carboxylic acid hydroxyalkyl esters which may be β -hydroxyethyl acrylate, β -hydroxypropyl acrylate, or β -hydroxyethyl methacrylate;

unsaturated carboxylic acid amides which may be acrylamide, methacrylamide, itaconamide, or maleic acid monoamide, or their derivatives; and

aromatic vinyl monomers which may be α -methylstyrene, vinyl toluene, or P-methylstyrene.

11. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 1, wherein the gel content of said styrene-butadiene latex manufactured finally is 30 to 90%.

12. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 1, wherein the glass transition temperature of said core latex is -10 to 50°C, and the glass transition temperature of said shell polymers is -20 to 40°C.

13. (Original) The method of manufacture of a styrene-butadiene latex according to Claim 1, wherein the average particle diameter of said core latex is 40 to 90 nm, and the average particle diameter of said styrene-butadiene latex manufactured finally is 130 to 260 nm.

14. (Currently Amended) A styrene-butadiene latex manufactured according to ~~any of Claims 1 through 13~~.

15. (Currently Amended) A paper coating solution including a styrene-butadiene latex manufactured according to ~~any of Claims 1 through 13~~.

16. (Currently Amended) Coated paper coated with a paper coating solution including a styrene-butadiene latex manufactured according to ~~any of Claims 1 through 13~~.

17. (Currently Amended) A styrene-butadiene latex, comprising characterized by having a structure in which multiple layers of styrene-butadiene polymers are coated onto the outer side of the core latex of said styrene-butadiene polymers as shell polymers.